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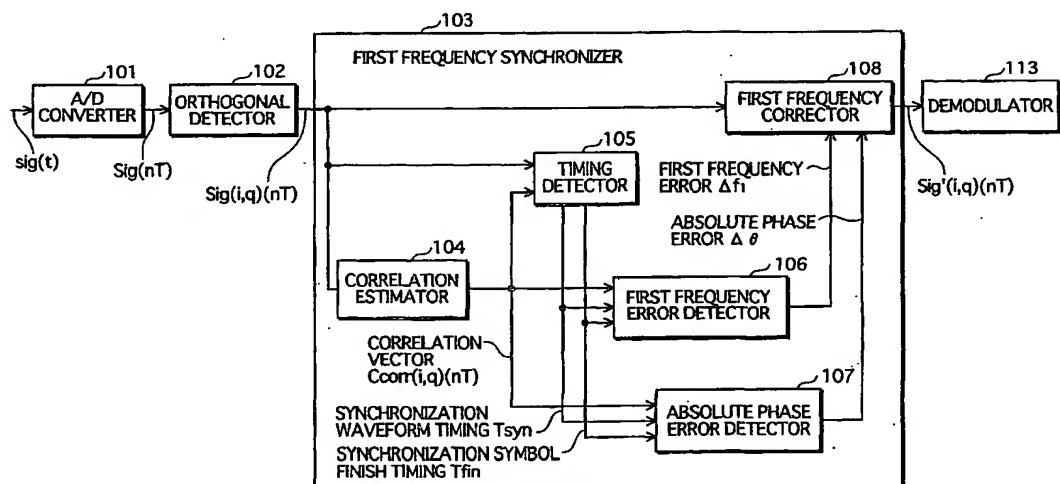
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(54) Title: FREQUENCY SYNCHRONIZATION APPARATUS AND FREQUENCY SYNCHRONIZATION METHOD



(57) Abstract: A first frequency synchronization unit (103) corresponds to the frequency synchronization apparatus of the present invention. A higher apparatus that is, for example, a wireless receiver supplies a reception signal to the first frequency synchroniza-
tion unit (103) via an A/D converter (101) and an orthogonal detector (102). A synchronization symbol that includes a predetermined
waveform at least twice is incorporated into the reception signal. A correlation estimator (104) generates a reference signal express-
ing the same waveform as the synchronization symbol, and successively finds correlation vectors between the reception signal and
the reference signal. A first signal error detector (106) finds a frequency error based on an average phase difference of predetermined
correlation vectors, and finds an absolute phase error based on transition of absolute phase of predetermined correlation vectors. A
first frequency corrector (108) simultaneously gives the reception signal a frequency shift and phase rotation that cancel the errors.